



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2021-0869; Project Identifier AD-2021-00176-E; Amendment 39-21878; AD 2021-26-19]**

**RIN 2120-AA64**

#### **Airworthiness Directives; General Electric Company Turbofan Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for certain General Electric Company (GE) CF34-8C and CF34-8E model turbofan engines. This AD was prompted by a report of a quality escape during the manufacturing of a high-pressure turbine (HPT) rotor stage 1 disk. This AD requires removing the HPT rotor stage 1 disk from service and replacing the HPT rotor stage 1 disk with a part eligible for installation. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this final rule, contact General Electric Company, 1 Neumann Way, Cincinnati, OH 45215; phone: (513) 552-3272; email: [aviation.fleetsupport@ge.com](mailto:aviation.fleetsupport@ge.com); website: <https://www.ge.com>. You may view this service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (817) 222-5110. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0869.

#### **Examining the AD Docket**

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2021-0869; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket

contains this final rule, any comments received, and other information. The address for Docket Operations U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Scott Stevenson, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7132; fax: (781) 238-7199; email: Scott.M.Stevenson@faa.gov.

**SUPPLEMENTARY INFORMATION:**

**Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to certain GE CF34-8C5, CF34-8C5B1, CF34-8E2, CF34-8E2A1, CF34-8E5, CF34-8E5A1, CF34-8E5A2, CF34-8E6, and CF34-8E6A1 model turbofan engines. The NPRM published in the *Federal Register* on October 8, 2021 (86 FR 56217). The NPRM was prompted by GE notifying the FAA of a quality escape that occurred during the manufacturing of an HPT rotor stage 1 disk. The quality escape occurred at a supplier that began production in August 2019. On November 25, 2019, the supplier discovered tool gouges at the forward chamfer on the air holes of an HPT rotor stage 1 disk. These gouges may reduce the life of the HPT rotor stage 1 disk. In the NPRM, the FAA proposed to require removing a certain HPT rotor stage 1 disk from service and replacing the HPT rotor stage 1 disk with a part eligible for installation. The FAA is issuing this AD to address the unsafe condition on these products.

**Discussion of Final Airworthiness Directive**

**Comments**

The FAA received a comment from one commenter, the Air Line Pilots Association (ALPA). ALPA supported the NPRM without change.

**Conclusion**

The FAA reviewed the relevant data, considered the comment received, and determined that air safety requires adopting the AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. This AD is adopted as proposed in the NPRM.

## **Related Service Information**

The FAA reviewed GE CF34-8C Alert Service Bulletin (ASB) 72-A0344 R01 and GE CF34-8E ASB 72-A0228 R01, both dated December 19, 2019. The ASBs describe procedures for removing the HPT rotor stage 1 disk. The FAA also reviewed GE Repair Document RD # 150-1811-P1, dated March 17, 2020. This document describes procedures for repairing the HPT rotor stage 1 disk.

## **Costs of Compliance**

The FAA estimates that this AD affects 23 engines installed on airplanes of U.S. registry.

The FAA estimates the following costs to comply with this AD:

### **Estimated costs**

<b>Action</b>	<b>Labor Cost</b>	<b>Parts Cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Remove and replace HPT rotor stage 1 disk	812 work-hours x \$85 per hour = \$69,020	\$258,100	\$327,120	\$7,523,760

## **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

## **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**2021-26-19 General Electric Company:** Amendment 39-21878; Docket No. FAA-2021-0869; Project Identifier AD-2021-00176-E.

#### **(a) Effective Date**

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to General Electric Company (GE) CF34-8C5, CF34-8C5B1, CF34-8E2, CF34-8E2A1, CF34-8E5, CF34-8E5A1, CF34-8E5A2, CF34-8E6, and CF34-

8E6A1 model turbofan engines with an installed high-pressure turbine (HPT) rotor stage 1 disk, part number (P/N) 4125T22P04, and a serial number (S/N) listed in Figure 1 or Figure 2 to paragraph (c) of this AD.

**Figure 1 to Paragraph (c) – HPT rotor stage 1 disk, P/N 4125T22P04, installed on CF34-8C5 and CF34-8C5B1 engines**

<b>HPT Rotor Stage 1 Disk S/N</b>
NCU1234C
NCU0180C
NCU0174C
NCU0183C
NCU6175C
NCU6174C
NCU7694C
GATJ8T64
NCU7065C
NCU7068C
NCU6173C
NCU1232C
NCU7698C
GATJ8P5T

**Figure 2 to Paragraph (c) – HPT rotor stage 1 disk, P/N 4125T22P04, installed on CF34-8E2, CF34-8E2A1, CF34-8E5, CF34-8E5A1, CF34-8E5A2, CF34-8E6, and CF34-8E6A1 engines**

<b>HPT Rotor Stage 1 Disk S/N</b>
GATJ8PJF
GATJ8P5R
NCU9014C
NCU9654A
GATJ903T
NCU8314C
GATJ8WK4
NCU9785A
NCU1233C
NCU2151C
NCU7070C
NCU2920C
NCU7692C
NCU6171C
GATJ8TCF
GATJ8T63
NCU8313C

**(d) Subject**

Joint Aircraft System Component (JASC) Code 7250, Turbine Section.

**(e) Unsafe Condition**

This AD was prompted by a report of a quality escape during the manufacturing of an HPT rotor stage 1 disk. The FAA is issuing this AD to prevent failure of the HPT rotor stage 1 disk. The unsafe condition, if not addressed, could result in uncontained disk release, damage to the engine, and damage to the airplane.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

For all affected engines, at the next engine shop visit or before the HPT rotor stage 1 disk accumulates 7,600 cycles since new, whichever occurs first after the effective date of this AD, remove the HPT rotor stage 1 disk from service and replace with a part eligible for installation.

**(h) Definitions**

For the purpose of this AD:

(1) An “engine shop visit” is the induction of an engine into the shop for maintenance involving the separation of pairs of major mating engine flanges, except that the separation of engine flanges solely for the purposes of transportation without subsequent engine maintenance does not constitute an engine shop visit.

(2) A “part eligible for installation” is an HPT rotor stage 1 disk that is not listed in Figure 1 or Figure 2 to paragraph (c) of this AD or an HPT rotor stage 1 disk that has been repaired using an FAA-approved repair.

Note 1 to paragraph (h)(2): Guidance for repairing the HPT rotor stage 1 disk can be found in GE Repair Document RD # 150-1811-P1, dated March 17, 2020.

**(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in paragraph (j) of this AD. Information may be emailed to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(j) Related Information**

For more information about this AD, contact Scott Stevenson, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7132; fax: (781) 238-7199; email: [Scott.M.Stevenson@faa.gov](mailto:Scott.M.Stevenson@faa.gov).

**(k) Material Incorporated by Reference**

None.

Issued on December 15, 2021.

Lance T. Gant, Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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